

THE
BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. XC.]

THURSDAY, JANUARY 1, 1874.

[No. 1.

Original Communications.

THERMOMETRY.

By CHARLES E. BUCKINGHAM, M.D., Boston.

It occurred to me that many of the statements in the treatise of Wunderlich, published by the Sydenham Society, did not agree with observations upon my own patients. The range of temperature with them, and also with persons apparently in good health, was much larger than he allowed. It seemed as if in my own records, taken early in the morning, *before food*, a much greater depression was observed than anything shown in his records. Temperature, so far as I can find out, is usually recorded *after* the morning meal, at noon, and *after* the evening meal. During the month of November, I made the following personal observations: There were six observations in the day. As a rule, the first was while dressing in the morning; the second was immediately after breakfast; the third just before, the fourth just after dinner; the fifth and sixth before and after supper. The instrument used was Casella's 14,543. It was placed under the tongue, and retained there not less than six (6) minutes. Anything out of the regular course was noticed in making the record, which reads as follows. (For table, see next page.)

On examining these observations, one is much surprised to see that there is a variation, between the lowest and highest points reached, of four and four-tenths (4.40) degrees, or from 95° to 99.4° . Take, however, the record made after eating, and the variation is only two and two-tenths degrees (2.20); while taking the record made before eating, sometimes when very much fatigued, and sometimes not at all so, and the variation is four and two-tenths (4.20) degrees, or from 95° to 99.2° .

The use of a hot bath in the morning is spoken of in the record. Its effect on the morning of the 26th is well worth noticing, raising the temperature of the body, as it did, a whole degree, and this effect increased another whole degree by the breakfast.

The table, it seems to me, it is well worth the while of medical men to look at. It may lead to more care in fixing hours for the use of the instrument; and if the experience of others should give similar results, the anxiety caused by unexplained variations might be diminished.

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November.	Before Breakfast.	After Breakfast.	Before Dinner.	After Dinner.	Before Supper.	After Supper.	REMARKS.
1	97.8°	98.8°	—	98°	99°	99°	
2	96.8°	97.8°	97.2°	98.2°	—	99.2°	
3	97.8°	98.2°	98.2°	—	—	99°	
4	97.6°	98.4°	—	98.2°	—	99.2°	
5	96.8°	98.4°	—	98°	—	98°	Hot bath before dressing.
6	96.8°	98.4°	97°	97.6°	—	97.8°	
7	98°	99°	98.4°	98.4°	98.8°	98.8°	{ From and after this date, glass was warmed in hand before putting it in mouth.
8	96.8°	98.6°	97.4°	98°	—	98°	Hot bath before dressing.
9	98°	98°	98°	97.8°	98.6°	99.4°	Slight sore throat.
10	98°	99.2°	98°	98.4°	97.6°	99°	" " "
11	98°	98°	97.4°	97.6°	99°	99°	Sore throat.
12	96.6°	99°	—	—	98.2°	99.2°	{ Out before daylight. Instrumental labor.
13	97.8°	98.8°	97.4°	—	—	98°	Hot bath before dressing.
14	95.6°	98.4°	95°	97.4°	—	99°	{ Cold, windy day. Took long ride in wind. Took tea at dinner. No wine.
15	96.4°	98.2°	96.4°	97.2°	98°	98°	Neither tea nor wine at dinner.
16	96.4°	98.8°	97.6°	98.8°	97.6°	98.4°	{ Out from 12 $\frac{3}{4}$ to 7 $\frac{1}{4}$, A.M. Slight rheu- matic pain in left hand for past twenty- four hours. Tea for dinner.
17	97.2°	98.4°	96.8°	98°	96°	98.6°	Whiskey at dinner.
18	97.8°	99°	98.2°	99°	98°	98.6°	
19	97.4°	98.8°	—	98°	97.4°	99°	
20	97.4°	97.4°	98°	98°	98.2°	99°	
21	97.8°	98.4°	98°	98.4°	—	98.8°	
22	96.8°	98.8°	98°	98°	98°	98°	
23	97.4°	98.6°	97.6°	98°	99.2°	99°	
24	97.6°	98.6°	98.4°	98.6°	99.2°	99.4°	
25	97.8°	98.8°	96.4°	98.2°	96.8°	98°	{ Out soon after 11, P.M., 24th. Re- turned at 7, A.M. Little sleep; broken.
26	96.2° 97.2°	98.2°	96.4°	98°	98.4°	98.6°	{ Up from 3.40, A.M. Lowest point on this line taken after reaching home.
27	96.4°	98°	—	—	95.4°	98.6°	{ The other after a hot bath.
28	96°	—	97.4°	—	98.4°	98.4°	
29	98.4°	97.2°	98.2°	99°	99.2°	99.4°	
30	97.8°	98.4°	97.8°	—	98.2°	97.8°	

PEPSIN.

BY R. T. EDES, M.D.

Read before the Dorchester Medical Club.

PEPSIN is the peculiar ferment present in the gastric juice. As a physiological experiment, the juice itself can be used for artificial digestion, but obviously cannot be obtained in sufficient quantity for therapeutic application. Various methods have been employed to obtain the active principle in a form suitable for medical use. Boudault's, Morson's, Beale's and various others have been prepared in Europe, but it is sufficient to mention only the three first, as the others have not come into use here. "The pepsin of commerce is either mucus of the stomach scraped off and dried, or a mixture of pepsin, peptones and starch, containing a little lactic acid."* Beale's corresponds to the first part of the description, Boudault's and Morson's to the second. By far the larger part of these consists of starch, as a diluent is necessary to enable them to be dispensed.

The process of Mr. Scheffer, of Louisville, consists in macerating the chopped mucous membrane of the hog's stomach in acidulated water, and, after allowing the mucus to settle, precipitating the pepsin by a saturated solution of common salt.

The precipitate is dried upon a cloth, its digestive strength estimated by experiment, and then mixed with sugar of milk in such proportion that 10 grains dissolves 120 grains of hard-boiled white of egg in four to six hours under the appropriate conditions.

Although this experiment cannot be considered as exactly representing the amount of work done in the stomach; yet it furnishes the only available means of comparison between different preparations. I have examined, in this way, Boudault's neutral, Morson's, Procter's, Hawley's, and the "Aromatic Liquid Pepsin," which has been extensively advertised within a few weeks. Procter's and Hawley's, the first of which is avowedly, and the second probably, made by Scheffer's process, were exceedingly efficient, leaving but a small residue, and that pulpy and friable. The action of Morson's and of Boudault's was very slight, in fact hardly perceptible, and the same is true of the "Aromatic Liquid Pepsin."† These experiments were performed only twice with Boudault's and Morson's, with the same result, since there seems to be no reason for using imported preparations, which are more expensive, less elegant, and vastly less efficient than those which we have furnished us here. As regards the "Aromatic Liquid," the experiment was repeated twice more with a similar result.

I did not succeed in making Procter's, which was the preparation used in subsequent experiments, dissolve the full amount of albumen, but it may easily be imagined that the variation in the amount of

* Gmelin's Handbook of Chemistry. 1870.

† Since writing this sentence, I have noticed in the Practitioner an examination of three English preparations, Savory & Moore's, Morson's pepsina porci, and Squire's. The digestive power of all was extremely slight.

heat, in the degree of comminution, and especially in the amount of stirring and of shaking, might have a great influence on the quantitative result. In each experiment, however, the different preparations were treated in a precisely similar manner in these respects. At first, the residue was weighed to determine the amount of albumen dissolved; but, owing to the differences in the amount of water absorbed, and the difficulty in properly drying the residue, especially when partly digested, I think that the appearance of the fragments of albumen is, for practical purposes, quite as reliable.

It is very well known that many manufacturers, being aware that sundry other drugs have their uses in the treatment of dyspepsia, but forgetting that, in physiology and therapeutics, two and two do not always make four, have combined pepsin with any three or four of these drugs in the much advertised and, I fear, much used compound aromatic fragrant tonic and invigorating elixirs of pepsin, bismuth, strychnia, quinia, cod-liver oil, lacto-phosphate of lime, and Liebig's extract of beef.

Mr. Scheffer, whose experiments upon pepsin have extended much beyond the preparation of the most reliable form of this useful agent, has shown not only that the pepsin is usually precipitated by the alkalinity of the fluid used to hold the bismuth in solution, but that the bismuth itself precipitates the pepsin. The action of an elixir of bismuth, strychnia and pepsin is shown in this bottle, which may be called a visible dyspepsia, the pieces of albumen being shrunken, dark and tough, without the faintest trace of solution. I also tried a granular effervescent preparation of the same kind, with absolutely no digestion. Finally, I added the ordinary subnitrate of bismuth to a bottle containing the usual materials, with the result which you see (no digestion).

I think we may fairly conclude that any preparation purporting to contain both bismuth and pepsin contains *none* of the latter; and also that bismuth and pepsin in the form of powder is not an eligible combination. If it is desired to give both they will be more efficient separately.

As regards alcohol, Mr. Scheffer stated, in one of his earlier essays, that "dry pepsin, precipitated with alcohol from its solution, did not act at all on albumen." This he afterwards found to be a mistake, since it was not from an acid solution that he obtained a precipitate by alcohol, but from one rendered neutral by carbonate of soda. The carbonate of soda permanently modifies the digestive properties of pepsin, and destroys its action on freshly-coagulated albumen. It still acts, in a different manner, upon partly digested albumen. He showed, however, and this phial shows the same thing, that alcohol does not, in small quantity, prevent the digestive process, but retards it. You notice that the amount of albumen remaining, although evidently acted upon, is much larger than that in the standard phial. It would seem, then, that a wine of pepsin may contain

some of the ferment, although, from the activity of the mucous membrane, after the wine has been prepared from it, the quantity extracted cannot have been large. Another property of pepsin, which I have not before mentioned, indicates that it is to be found in rennet wine or liquid rennet. This is used for the purpose of coagulating milk, which it will do at ordinary temperatures. This coagulation is not due to its acid, as was found by comparing its action with that of dilute muriatic acid of about the same strength. If to the tube containing milk unacted upon by the acid, pepsin was added, coagulation then took place.

Also, if the rennet wine were *boiled*, it lost its action upon milk; so that, so far as its power in coagulating milk goes, rennet wine behaves like an acid solution of pepsin. The proof, however, must be in the direct experiment, the result of which you see. (A small amount of digestion. The temperature was a few degrees lower than in previous experiments, and the digestion of the albumen in pepsin, made at the same temperature for comparison, also took place slowly.)

I have tried no preparation of the wine of pepsin. There seems no reason why these should differ from the liquid rennet.

It has been thus far assumed that the conditions in these experimental phials and in the human stomach were nearly the same. It is fair, however, to state certain points of difference. In the stomach, the agitation and mixture of the solvent and food is, or ought to be, much more thorough. In the stomach, the portion digested is absorbed nearly as fast as it is formed.

In the stomach, certain incompatibles may be removed before the action of the pepsin is completed. This is chiefly true as regards alcohol, which, in ordinary doses, is probably absorbed long before the time for the digestion of an ordinary meal is over. It is not infrequently objected that the amount of albumen dissolved by pepsin is entirely insignificant in proportion to the amount usually taken at a meal, even by an invalid. This is true, if we consider only the amount dissolved, with a given amount of acid, in these experiments, which are intended to represent only the relative value of different varieties. Mr. Scheffer has, however, shown that, under conditions resembling more closely those of stomach digestion, pepsin may be made to dissolve much more. By the successive addition of acid, water and albumen, the amount of the latter dissolved can be very much increased, so that half a grain of purified pepsin, that is the pepsin before the addition of the sugar of milk, dissolved 1500 grains of albumen, and perhaps would have done more.

In another experiment, he found that, upon adding a saturated solution of common salt to the clear fluid obtained by the digestion of albumen, a precipitate was produced which, in its turn, being dissolved in acidulated water, digested still more albumen, and, by continuing this process, twenty grains of saccharated pepsin dissolved at

the rate of between 4000 and 5000 grains. That is, we see that pepsin is a true ferment, and not a chemical reagent; so that, although the amount of albumen digested in the test tube in a given time furnishes a fair test of the value of the preparation, it does not limit its activity in an organ which absorbs more or less of formed products, and which, for all we know, may be capable of rapidly returning to its own interior the ferment which, while digesting other albuminoids and giving to them in their turn catalytic power, does not lose its own activity.

CONCLUSIONS.

Much of the dissatisfaction with pepsin expressed by physicians is due to the use of preparations which contain little or none of it.

The pepsin made by Scheffer's process is by far superior to any other in ordinary use.

The wine is feeble, but not necessarily inert.

Elixirs of pepsine and bismuth are humbugs.

Pepsin should be administered with an acid, and with as few drugs as possible. A small amount of alcohol is not inadmissible, but a large amount retards digestion.

Its beneficial action is *not limited* by the amount of albumen which it dissolves in a test tube without change or renewal of any of the contents.

"PEELING" THE NOSE, IN CASES OF HYPERTROPHY.—M. Ollier, of Lyons, has proposed, and in two instances carried out, an operation for the relief of the excessive hypertrophy of the nasal organ, occasionally met with in drunkards, the lobular masses there deposited being at times of such magnitude as to interfere with speech, respiration, or the reception of food, and occasionally impeding binocular vision, thus causing strabismus. The patient being narcotized, M. Ollier cuts through the skin and thickened tissues on the dorsum of the nose; then dissects them carefully upon each side, taking the greatest care not to touch the cartilages, and to preserve the fibrous tissue which holds them together. He thus entirely spares the fibro-cartilaginous framework of the nose, so as not to interfere with its form or functions. The introduction of a finger into the nasal cavity allows the surgeon to judge of the thickness of the tissue which he is leaving, and to be certain of the integrity of the essential parts of the nose.—*British Medical Journal*.

ARTIFICIAL BUTTER.—This new commodity, manufactured from beef suet, having met with an extensive sale in London and Paris, is now being introduced by M. Paraf into the markets of New York and Boston. We must admit that the single specimen seen by us, had both the appearance and taste of ordinary firkin butter. The butter is made from the yellow, tasteless and odorless oil that is obtained from beef suet. This oil is placed in churns, with one-fifth its weight of sour milk, and churned until an emulsion is formed, anatto being added to give it the required color. It is then cooled, and worked and salted like common butter.

Progress in Medicine.

REPORT ON MEDICAL CHEMISTRY.

By E. S. Wood, M. D.

PHYSIOLOGICAL CHEMISTRY.

Amount of Hæmoglobin in the Blood.—(*Comptes Rendus de l'Académie des Sciences.* June 16, August 11 and August 18, 1873.) M. Quinquand gives the results of analyses of blood for hæmoglobin, which are based upon the determination of the maximum amount of oxygen which any given specimen of blood can absorb, in accordance with the following principle: That the maximum volumes of oxygen absorbable by a given volume of any blood are proportional to the amount of hæmoglobin which these specimens of blood contain. Thus, he found that 100 cub. cent. of human blood will absorb 260 cub. cent. of oxygen; 100 cub. cent. of ox blood will absorb 240 of oxygen; and 100 cub. cent. of drake's blood, 170 of oxygen. These numbers are proportional to the amounts of hæmoglobin found by Pelouze in these three kinds of blood, viz., 12.5, 12 and 8.2 per cent. respectively.

He finds that a progressive diminution of the quantity of hæmoglobin in equal volumes of blood generally follows the animal scale. Young animals have less than adults, females less than males, and birds less than mammals. In man, the amount is quite constant between the ages of twenty-five and fifty years, varying in a healthy person from 125 to 130 grms. per 1000 of blood. The amount varies very much in disease, sometimes, as in cancer, falling as low as 38 grms. in 1000. The diminution was found to be greatest in cancer, chlorosis and tubercular phthisis.

Absorption Spectrum of Hydrobilirubin.—C. Vierordt (*Zeitschrift für Biologie*, ix. 2, p. 160) details some experiments upon the absorption bands of this substance, which was obtained by Maly from bilirubin.* These experiments are valuable as showing the coloring power of this pigment, as well as affording us a means of estimating its amount approximately in the urine or other fluid.

The solutions subjected to the test were solutions of pure hydrobilirubin in very dilute alcohol, the light first passing through a layer of the fluid one centimetre in thickness, and then entering the spectroscope through a slit one millimetre in breadth. A solution containing one part in 500 of liquid had a deep brownish-red color, and caused absorption of all the light to a point between C and D (C 75 D) of the spectrum, so that the proper absorption band does not appear when so concentrated a solution is used. A solution, 1:1000, is dark red and absorbs all the light to D 87 E. A solution, 1:2000, is also dark red and absorbs all the light to E 18 F. It is not until the solution has been diluted to such an extent that it contains but one part in 4000, that the proper absorption band appears. A solution of this strength has a yellowish red color and absorbs all the light to G 35 H, but an absorption band appears to the left of this point, occupying the portion of the spectrum between B and one-half the way between F and G. A solution, 1:8000, has a bluish tinge mixed with the red, and the ab-

* Vide first semi-annual Report. Jan. 2. 1873. P. 15.

sorption band produced is narrower, occupying the space from E 45 F to F 25 G. A solution, 1:16,000, produced a still narrower band from E 52 F to F 4 G. A solution, 1:32,000, has a feeble bluish red color, and produces an absorption band which is feeble and narrow, from E 63 F to F.

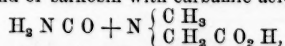
The band produced by an ammoniacal solution is more to the left than that of an alcoholic solution of the same strength, the maximum absorption in the case of the ammoniacal solution being between E 18 F and E 63 F, while that of the alcoholic solution is between E 63 F and F.

Hydrobilirubin was found in three specimens of fever urine out of five which were examined. It was not found in the urine of a patient suffering with sub-acute miliary tuberculosis of the lungs, with high fever, nor in that of a typhoid patient with high fever. It was, however, found to be present in the urine of a patient with mitral disease (attended with icterus), and also in the dark yellow urine of a patient with carcinoma ventriculi and acute pneumonia, in which case all of the light was absorbed to a point about half way between F and G; i. e., about the same as by the 1:8,000 solution, although the absorption band was very narrow and weak, corresponding more nearly to that of the 1:32,000 solution. Hydrobilirubin was also found in the reddish-yellow urine of a patient with acute rheumatism.

Comparative examinations with these specimens of urine showed, that in normal urine the absorption of light steadily increases from the red to the violet; in the hydrobilirubin solution, it increases from the red to the line F, then diminishes to G 10 H, and finally increases again from that point to the violet; in the carcinoma and pneumonia case, it increased from E 63 F to F 65 G, like normal urine; and, in the acute rheumatism case, it diminished from F 21 G, but began to diminish later than in the pure hydrobilirubin solution. These comparisons show that in the two specimens of pathological urine, in addition to the hydrobilirubin, at least one other pigment must exist, and that its proportion to the hydrobilirubin was greater in the acute rheumatism case than in the other.

Presence of Carbamic Acid in the Animal Economy.—The existence of this acid in the system has been demonstrated by the experiments of Schultzen (*Berichte der Deutschen Chemischen Gesellschaft*, v. 578) and Salkowski (*Ibid.*, v. 637 and vi. 744), and its discovery is a very important addition to our knowledge of the processes of the retrograde metamorphosis of tissue.

After administering sarkosin (methyl-glycocol) to a dog, in such an amount that the nitrogen contained therein was equal to the daily amount eliminated with the urine, Schultzen found that all of the urea and uric acid disappeared from the urine, and, in the place of these, different but well characterized organic products appeared. One of these was a compound of sarkosin with carbamic acid,



called sarkosin-carbamic acid, a substance which may also be considered to be a compound of urea. Its formation is easily explained by the fact that the sarkosin meets in the circulation with carbamic acid, which forms with it the above compound urea instead of ordinary urea, as is the case, for instance, if glycocol be administered instead of methyl-glycocol.

Another substance found by him in the urine, associated with the above, was a compound of sarkosin with sulphamic acid, which acid preëxists in albumen, and, under normal circumstances, is changed in the system to sulphuric acid and ammonia, the ammonia uniting with carbamic acid to form ordinary urea.

In like manner, after administering taurin to animals, Salkowski obtained a crystalline acid from the urine. This acid, which, when pure, is in the form of glistening quadrilateral plates, anhydrous, but deliquescent in moist air, soluble in water, but difficultly soluble in alcohol, and insoluble in ether, was found by analysis to be tauro-carbamic acid, a compound formed by the union of taurin with carbamic acid, it being precisely analogous to the sarkosin-carbamic acid obtained by Schultzen.

This union of taurin with carbamic acid, after ingestion of the former, takes place in men and dogs, but in rabbits, after the ingestion of taurin, only about one-fourth is absorbed and eliminated by the kidneys, the remainder appearing in the urine as sulphuric and sulphurous acids in combination with bases. Thus we have a rare example of the different chemical action of different orders of animals upon the same substance.

URINARY CHEMISTRY.

Clinical Test for Mercury in the Urine.—Mayenson and Bergeret (*Journal de Pharmacie et de Chimie*, Aug., 1873, from *Lyon Médical*) performed this test by suspending a piece of iron, by means of a platinum wire, in the urine, and adding a few drops of sulphuric acid. In about one half an hour, the mercury will be deposited on the platinum. The iron and platinum are then withdrawn, washed with water, dried in a current of air, and then plunged into an atmosphere of chlorine gas. By this means, corrosive sublimate is formed on the platinum, and may be detected by wrapping it in a cigarette paper, which has been moistened with a solution of iodide of potassium, and exposing to a temperature of 212° Fahr. If any mercury were present upon the platinum, a brick-red streak of the biniodide of mercury will be left, where the platinum touched the paper. This test, according to the authors, will detect $\frac{1}{150000}$ part of a soluble compound of mercury in the urine.

From experiments on patients and animals, they arrive at the following conclusions:—

1st. That the compounds of mercury, when taken but once and in a small dose, are completely eliminated from the system in about four days.

2d. If taken in repeated but small doses, several days are required for their complete elimination.

3d. That corrosive sublimate, when injected subcutaneously, penetrates to every part of the system in about one half an hour.

4th. That mercury is found in the largest amounts in the liver and kidneys. That it is eliminated by all of the excretory glands, and that iodide of potassium has a marked action in freeing the system from the mercury which has become fixed by the tissues.

Xanthine Calculus.—M. Jaillard (*Journal de Pharmacie et de Chimie*, Aug., 1873, from *Gazette Hebdomadaire*) describes one of these calculi, which was extracted from the bladder of a boy, æt. 13, by lithotomy. It measured 5 cm. (2 in.) in its longest diameter, and weighed

22½ grms. (5¼ drachms). Its external surface was rough, its color brick-red, and it was quite brittle, the ends having been injured somewhat by the forceps in its removal. When sawed, the cut surface was brownish-red, susceptible of a beautiful polish, and showed concentric rays, which were quite regular near the centre, but uneven near the periphery.

The powdered substance was completely volatilized by heat, insoluble in water, ether, and the alkaline carbonates, but easily soluble in liquor potassii or sodii, ammonia water, sulphuric, nitric and hydrochloric acids. The solution in liquor potassii was precipitated by a current of carbonic acid gas, the precipitate being amorphous. The nitric acid solution left, after evaporation, a yellow residue, which was not changed by the addition of ammonia or a solution of corrosive sublimate. The alkaline solutions reduced neither a solution of the nitrate of silver, nor one of the potassio-cupric tartrate.

Cystin Calculi.—Jul. Müller (*Fresenius' Zeitschrift*, 1873, ii. p. 234, from *Archiv der Pharmacie*, Bd. iii. p. 308) has analyzed several of these calculi, which varied in size from that of a mustard seed to that of a bean. They consisted of pure cystin, and contained 25.3 per cent. of sulphur. The test recommended is to dissolve the powder in a small quantity of liquor potassii, dilute with water after cooling, and then add to the solution one of nitro-prussiate of potassium, when a beautiful violet is produced.

TOXICOLOGY.

Phosphorus Poisoning.—The number of cases, which testify to the value of turpentine as an antidote to phosphorus, is rapidly accumulating. Four are reported in full by Dr. Andant (*Annales d'Hygiène*, Oct. 1873), and others by Rommelaere and Mahame (*Jahresbericht über die Pharmacognosie, Pharmacie und Toxicologie*, 1873). From observations on the above cases, and also from the experiments of Köhler, we may draw the following conclusions:

1st. That one part of turpentine is more than sufficient to neutralize the injurious effects of $\frac{1}{100}$ part of phosphorus.

2d. That the turpentine-phosphorous acid is formed by contact of the turpentine and phosphorus, as well within the system after absorption, as in the stomach.*

3d. That the turpentine should be given for a long time, i. e., for several days after the ingestion of the poison. In one of Rommelaere's cases the patient took, during 12 days, 37 grms. of turpentine, between four and five being given at the first dose.

4th. That the diet of the patient should be as nearly free from fat as possible, since fats or oils facilitate the absorption of the phosphorus; consequently, milk should not be given as a drink, nor castor oil as a purge. One of Mahame's patients, who was steadily improving under the turpentine treatment, suddenly failed and died after the administration of castor oil by her parents, contrary to the advice of the physician.

D. A. von Bastelaer gives, in the *Journal de Pharmacie et de Chimie* (May, 1873), a method for the separation of phosphorus in a state of purity from food, contents of the stomach, or other substances which contain fat, so that in medico-legal cases it can be taken into court as the *corpus delicti*. This process depends upon the ready solubility of

* Vide the first semi-annual Report, Jan. 9, 1873, p. 35.

both phosphorus and fat in ether, and the solubility of the fat in ammonia water, which is without action upon phosphorus.

The substance, after the addition of water, if necessary to render it sufficiently fluid, should be shaken with an equal volume of ether repeatedly for four or five hours, the ether decanted, and the process repeated with fresh ether two or three times. The united ethereal fluids should then be allowed to evaporate spontaneously, a little water being added toward the end of the evaporation, in order to prevent contact of the phosphorus with the air. The aqueous liquid, after the evaporation of the ether, should then be warmed to 50° or 60° C., which will cause the particles of phosphorus to unite together in the form of a drop at the bottom of the vessel containing the water, while a large portion of the fat will float upon the surface of the water. Some of the fat, however, remains with the phosphorus, and can be separated from it by shaking with strong ammonia water several times. Then, by washing the phosphorus with dilute sulphuric acid and finally with water, we obtain it perfectly pure, and with its characteristic physical and chemical properties.

Action of Water upon Metallic Lead. By SIR ROBERT CHRISTISON, Bart. (*Chemical News*, July 11th, 1873.)—The results obtained by the author from many experiments are as follows :

"1st. That the purest waters act the most powerfully on lead, corroding it and forming a carbonate of peculiar and uniform composition.

"2d. That *all* salts impede this action, and may prevent it altogether; some of them when in extremely minute proportions.

"3d. That the proportion of each salt required to prevent action is nearly in the inverse ratio of the solubility of the compound which its acid forms with the oxide of lead."

The statement is also made that sulphuretted hydrogen, as usually employed, will detect lead if it is dissolved in ten million parts of water, but "facts, however, warrant the conclusion, that the impregnation must amount to at least ten times this quantity before water can act injuriously upon man, however long it may be used."

POISONING BY PSEUDO-HOMŒOPATHIC PREPARATIONS.—At a recent meeting of the Clinical Society of London, Dr. George Johnson reported three cases of poisoning, from small doses of the "Concentrated Essence of Camphor," now extensively employed by the followers of Hahnemann. Dr. Johnson called attention to the notorious fact that, in England, the homœopaths have lately made a change of base, "passing from the irrational and ludicrous extreme of infinitesimal dilutions to the dangerous extreme of the greatest possible concentration of active and poisonous drugs." In the discussion which followed the reading of this paper, several other cases were cited of analogous malpractice on the part of these charlatans, who being unwilling to publicly renounce the absurdity of infinitesimal doses, have recourse to these concentrated tinctures, in order to produce an appreciable effect, by very minute doses. The *British Medical Journal*, in commenting upon this exposure, finds additional evidence that homœopathy, "which had begun as a delusion, is now rapidly ending as a fraud."

Reports of Medical Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. F. B. GREENOUGH, M.D., SEC.

OCT. 13th.—*A Case of Ataxic Symptoms for three Years or more. Atrophy and Sclerosis of Spinal Cord.* Dr. Edes reported the case and showed the specimen.

The patient, F. A. S., æt. 70, entered the City Hospital Sept. 15th. Had been a moderate drinker. Had had gonorrhœa, but not syphilis. Was healthy until fifteen years ago. Then he began to have attacks of dizziness and staggering while walking, lasting a minute or two. These have gradually increased in frequency since. There was no loss of power in legs at any other time until three years ago, since when he has gradually lost power over them, until now he cannot walk alone. Dizziness and staggering are much worse when the eyes are closed. For the last eighteen months, has lost power over sphincter ani, dejections often taking place without his knowledge. Can retain urine for about three hours; after that time it dribbles away. Mind not quite so strong as formerly, but does not think his memory has been affected. Cannot write what he wishes to. "Thinks one thing and writes another," but can pronounce words which he desires. Never had pain in back, except for a few days on re-application of a truss which he had worn for many years and left off for a short time. Then pain was felt on right side of lower lumbar vertebrae, and left leg was partially paralyzed, both in sensation and motion. On removing truss, symptoms disappeared. Appetite good. Tongue somewhat coated. Bowels irregular; at present somewhat loose. Sensation not so acute in left leg as in right, but decided tactile anæsthesia in both legs. Answers questions readily, but slowly; articulation rather indistinct. No history of anything like "*douleurs fulgurantes*" could be obtained.

After his entrance, he was at times delirious, attempted to get out of bed, but could not walk. Could stand with his eyes open, but on closing them, immediately began to tip forward or backward, as happened. Could write slowly, but a very intelligible hand. Electricity (Faradic) and phosphorus were ordered. The muscles reacted well to the stimulus. He gradually failed in strength and in mental capacity. On Oct 7th, muttering delirium was noted. When roused, answered questions. Lay with his eyes half closed and head retracted. Pupils much contracted; do not respond to light. He died on Oct. 9th.

Autopsy.—The dura mater was firmly adherent to the skull. The pia mater was somewhat thickened and finely mottled with whitish opacities, and contained in its meshes about three ounces of serum. Brain substance healthy. Dura mater of spinal cord presented some patches of whitish opacities, resembling those mentioned above. The pia mater was congested and the vessels enlarged, especially upon the posterior surface. It contained, at various places, small porcelain-looking (microscopically fibrous) plates from one fourth of an inch in diameter down, usually more or less oval in outline, with thin edges. These were most abundant in lower dorsal and upper lumbar region.

The cord itself showed a very marked diminution in size, more evident in the cervical region, where it appeared flattened out, hardly

more than one half or two thirds its normal size. It looked as if puckered in on its posterior surface. On section, a gelatiniform or semi-translucent look was observed in the posterior columns.

Sections made at various heights, colored and made transparent in the usual manner, showed a certain amount of atrophy of the whole white substance, the sections being compared with others from a normal cord. In the posterior columns, which were the most atrophied, the characteristic lesions of locomotor ataxy, or so-called sclerosis, could be seen, the nervous elements being much diminished in number and the interstitial fibrous tissue increased. In the lumbar region, this alteration was chiefly found in a thin layer of the whole posterior surface, from the nerve roots of one side to those of the other, being thickest just internally to the posterior nerve roots and on each side of the posterior septum. In the dorsal region, it extended somewhat deeper, while in the cervical it was chiefly confined to the "wedge-shaped columns of Goll," situated upon each side of the posterior median fissure, and occupied nearly the whole depth of the cord to the posterior commissure, this depth, however, being but about half the normal. Outside the limit of these columns, a much less degree of the same alteration was to be seen. It was undoubtedly owing to the extreme atrophy of these centrally situated columns that the cord owed its contracted appearance in the cervical region.

The nerve roots were also atrophied. No corpora amylacea or granular corpuscles were found on examination of the fresh specimen.

The precise height at which the lesion terminated was not made out. No sections were made at the level of the spinal accessory roots, while at the level of the decussation, no change could be detected.

No portion of the brain above the pons was examined microscopically. Other organs were healthy.

Dr. EDES showed drawings on an enlarged scale of sections made through a healthy cord, and of the specimen. These drawings showed the marked atrophy of the posterior columns very clearly.

The Line of Dulness in Pleuritic Effusion.—Dr. ELLIS referred to this subject, and to some remarks which he had made on it at a previous meeting, in March, 1873, which were as follows.

Dr. ELLIS said, it is generally stated and believed that when serum began to collect in the pleural cavity, it is first detected in the lowest part of the back, the line extending from the spinal column outward, unless old adhesions cause a variation.

Dr. ELLIS thought that there were many exceptions to the rule. When the effusion is small, it may occupy a conical portion of the pleural cavity in the sub-axillary region, when both resonance and respiration may be wanting.

But, in a certain number of cases where the effusion is quite large, if an accurate line be drawn, the flatness will be found to describe a curve, gradually approaching the spine toward the base of the chest, having a space from one to three or more inches broad between the spine and the line of flatness. In this space, resonance will still be detected, and respiration heard. As the effusion increases, this line approaches nearer and nearer the spine, until the whole back becomes flat. The modifications of the voice noticed in pleurisy bear the same relation to this line as they do to the horizontal. It was thought that the point might be of value in diagnosis, as the presence of both resonance and respi-

ration on the part of the back mentioned might lead one to conclude that there was no effusion.

Dr. FITZ asked if the return to resonance and normal respiration by means of the absorption of the effusion showed the same curved line.

Dr. ELLIS was not able to say whether this was the case or not.

At a subsequent meeting, Dr. FIFIELD, in speaking of the means of estimating the amount of fluid in the pleural cavity, said that the following facts had been proved by Damoiseau, namely, that when a subsiding effusion was sufficient to reach a level of seven centimetres, or more, above the nipple, the line of dulness was a horizontal one, but that when the effusion was less, the line of dulness was a curve, the highest point of which was at the side, from which it gradually fell as it approached the median line towards the spine. This curve was known as the "curve of Damoiseau," and had been also noticed by Dr. Ellis in increasing effusions. Dr. Fifield read extracts from a copy of the *Revue Médicale* of 1843, in which Damoiseau's article appeared.

Dr. ELLIS said that, until his attention had been called to this article by Dr. Fifield, he had not been aware that the point had been observed, but that Damoiseau's description of this curve agreed with his observations, as did also a statement to the effect that a spot about two and a half centimetres above the anterior extremities of the eleventh and twelfth ribs was where a commencing effusion usually made itself first evident. He said that, at the time he had spoken on the subject, all his observations had been made in cases during the commencement of an attack, so that he could not form any opinion as to the occurrence of this curve in the return to normal resonance. Since then, however, he had had a case where the pleural cavity was so full as to call for paracentesis thoracis, and, after the fluid had been drawn off, the same curve was found. In still another case, in which spontaneous absorption took place, the same curve could be clearly demonstrated. It must be remembered, however, that adhesions may be formed during the inflammatory stage, which might prevent the fluid left taking this curved position, so that we should not expect to find this curved line in every case.

Dr. FIFIELD said that it was by no means clear why this curved line should be found, as it is stated that experiment has shown that when the pleural cavity is partially filled artificially, the line of dulness is the reverse of this.

Pulmonary Disease in connection with Pressure on the Primary Bronchus.—Dr. J. B. S. JACKSON spoke of a diseased condition of the left lung, found in connection with aneurism of the aorta, to which attention had been called by Dr. Ellis.

Dr. ELLIS said that he had found that pressure on either bronchus, by aneurism or any other tumor, was followed by inflammation in the lung to which the bronchus was distributed.

Dr. JACKSON spoke of a case in which the left bronchus was compressed by an aneurism, and the left lung was almost one mass of purulent disease, the right lung being perfectly healthy. The pulmonary symptoms only dated back five weeks previous to death, the first being the expectoration of a large amount of pus. In this case, the pus formed an opening in the thoracic walls.

Dr. ELLIS spoke of a case that he had seen in Berlin, where a bronchus was filled by a cancerous growth, and the lung was one mass of

small, caseous, pneumonic foci. The reason for this would seem to be that the whole function of the lung is perverted. The air does not enter it freely, and, moreover, the nutritive vessels and nerves must be compressed by the same means as the bronchus.

Cancer of Liver.—Dr. LYMAN reported the case and showed the specimen.

Ship carpenter, æt. 36. Entered hospital July 23, 1873. Had intermittent fever fifteen years ago. Has been hard drinker, especially of whiskey. Last winter, noticed occasional shooting pains in region of liver. Has never been jaundiced. Occasional vomiting during last two months. Three weeks ago, abdomen began to enlarge—is now greatly distended with ascitic fluid, skin tense and shining. Anasarca commenced a week ago, feet and legs now greatly swollen. Complains mostly of pain in region of liver. Micturition free. Temperature 98°, pulse 114, respiration 26.

24th.—Twenty pints clear fluid withdrawn by tapping, followed by such severe epigastric pain as to require subcutaneous injection.

25th.—Constant shooting pain over liver and pain in right shoulder. Urine acid; specific gravity 1023. Considerable albumen. Many granular epithelial cells and a small amount of biliary pigment. Hepatic dulness to fourth rib above and umbilicus below. Liver very hard and nodulated and tender. Movement of parietes developed a crepitus resembling emphysema and confined to region of liver. Abdominal veins enlarged. Anasarca subsiding.

Aug. 8.—Fifteen and one-half pints of clear fluid drawn by tapping, and again, Aug. 29th, fifteen pints. The peculiar crepitus followed each operation.

Sept. 27th.—Thirteen and three-quarters pints drawn; no crepitus found subsequently. The tumor now pushes the parietes one or two inches above the general surface, measuring about eight inches across by six down. Impulse of aorta strongly transmitted. Lower ribs project abruptly.

Oct. 10th.—The patient is now jaundiced. Fourteen and one-half pints of greenish fluid drawn, and again, on the 31st, eighteen pints.

Nov. 18th, died.—Until the last week, the patient's appetite and digestion continued good, and the tapplings were done at his own request to relieve the distention and dyspnoea.

Post-mortem.—Skin deeply jaundiced. Entire upper half of abdomen filled by enlarged liver, weighing eleven and three-quarters pounds, covering stomach, pancreas and spleen, and so adherent to these organs and to duodenum as to necessitate the removal of all *en masse*, but no extension of the disease to any of these organs. Liver hard, surface nodulated. Cancerous deposits hard and so abundant as to constitute nearly whole bulk of the organ. No pleural or pericardial adhesions. Heart healthy. Lungs contained a few scattering cancerous masses as large as peas or beans. A few cancerous nodules in peritoneum near the bladder. Right kidney degenerated and smaller than the left.

A Stomach-tube swallowed and on the following Day rejected.—Dr. JACKSON showed the tube and reported the case, which occurred in this vicinity.

The patient was a married woman, 45 years of age, suffering from acute mania, and had been fed with a stomach tube three times daily

for about a week. The tube that was used was of the ordinary kind, but had been cut down to fifteen inches in length, and there was tied to it a piece of common rubber tube, about five inches in length, and that connected it with the syringe. At 1, P.M., on the day on which the accident occurred, food was given as usual, and the struggles of the patient were so violent that her physician required the help of three assistants to manage her. The operation being over, and the syringe detached, he proceeded to remove the tube, when he found, to his dismay, that it had slipped off from its attachment. Every attempt was made, with the fingers and with the forceps, to seize it, but without effect. Four hours afterwards, Dr. Hodges saw her, and, after the passage of the long œsophageal forceps, and of a probang entirely into the stomach, without feeling the tube, he felt that it must have passed down into the stomach, though from the result this could hardly have happened. Nothing, of course, was to be done, and the case was left to nature, but without any idea of its expulsion, unless it should first traverse the whole course of the intestine. The following night was passed more comfortably than usual, though when the patient was awake, there was occasional retching, and, the next morning, between 8 and 9 o'clock, this was quite urgent. At 9, A.M., a stomach-tube of full length was again passed, food was given, and, on withdrawing the tube, the lost one came up and almost side by side with it, the upper or cut extremity of the tube coming up in advance. The retching was, of course, at once relieved, and on the second day the patient began to take her food in the natural way. The tube, when first expelled, was lead colored, but, on drying, it resumed its usual appearance, and it may now be seen in the museum of the Medical College, as a donation from the attending physician.

Disease in the Tusk of a Walrus.—Dr. JACKSON showed the section of the tusk, into the pulp cavity of which a large and luxuriant growth of osteo-dentine was protruding, made by Mr. Frederic A. Merrill, a student in the Dental College, and presented by him to the Medical College Museum. Preparations had also been made by Mr. M. to show the microscopic appearances. Dr. J. alluded to an enormous and similar growth, in the case of a sperm whale's tooth, that was shown some years ago to the Society, and to another case in which a large mass had probably been free in the pulp cavity, as minute granulations sometimes are in that of the human subject.

NEW DRUGS.—Two new plants, called *Echisis scholaris* and *Garcinia mangostana*, both natives of the Philippine Islands, have attracted some attention at the Vienna Exposition. From the bark of the *Echisis*, a hygroscopic bitter principle has been obtained, to which the name *Dilatin* has been given. This has proved not only a perfect substitute for quinine, but it has also been found that in its use the frequently unpleasant after-effects of quinine are avoided. The *Garcinia* has been shown to be a safe, rapid and thorough remedy for dysentery and chronic diarrhœa, as well as all catarrhal affections of the bladder and urethra. Both drugs have been extensively employed in the hospitals of Manilla, under the direction of Professor Miguel Zina, chief physician of that province.—*Zeit. des allg. Apoth.-Ver.*

Bibliographical Notices.

The Life of John Warren, M.D., Surgeon-General during the War of the Revolution; first Professor of Anatomy and Surgery in Harvard College; President of the Massachusetts Medical Society, &c. By EDWARD WARREN, M.D., Author of the Life of Dr. John C. Warren. Boston: Noyes, Holmes and Company. 1874.

THE painstaking fidelity and fraternal feeling which Dr. Edward Warren exhibited in the Life of his brother, Dr. John C. Warren, have prepared us to expect the same diligence and not less affectionate interest, certainly, in this new work, the Life of Dr. John Warren, his father. If he had called it the Life and Times of its subject, he would have given a better hint as to what the reader was to anticipate. The book is made up very largely of accounts of the scenes and events in the midst of which Dr. Warren passed his busy life, and will interest our local antiquarians and historians as well as the members of the medical profession.

The name of Warren has been associated with the practice of medicine in Boston for more than a century. It began illustrious and has always continued eminent. We must look abroad to find such another instance. Monro *Tertius* died in 1859, the last of the three Professors of Anatomy in the University of Edinburgh, with which institution they were connected during a century and a quarter. The example of the Warrens, and, we may add, that of the Adamses, shows that even the republican *furca* cannot drive off Nature when she insists on keeping up a line of her own selection and giving them hereditary privileges. We have had family dynasties here in New England from a very early period, as one of the old epitaphs shows us in homely verse:—

“Under this stone lies Richard Mather,
Who had a son greater than his father,
And eke a grandson greater than either.”

The fame of Joseph Warren, the first distinguished martyr of the Revolution, is the central glory of the name. We are apt to forget, in recalling his patriotic services and his death on the battlefield, that he was also the founder of the medical and surgical reputation which have so long flourished among the descendants of the same stock with himself. Joseph Warren was twelve years older than his brother, the subject of this biography, who studied medicine in his office. The double relation of brother and pupil must have been something far beyond that which commonly connects the student with his instructor in our time. It was, as the biographer points out, a kind of apprenticeship. We see, in Dr. John Warren's life, the effect of the practical teaching which fitted him to enter on important duties at an early age, and we see also the warm attachment of the younger brother to the elder, whose death seemed to him like the loss of a parent.

Joseph Warren was the pupil of James Lloyd, who was educated in England. Dr. Lloyd had walked the hospitals with Cheselden and Sharpe, he had attended the lectures and operations of Dr. William Hunter, and enjoyed the advantage of his private instructions; he had sat at the feet of Smellie and of Warner of Guy's Hospital, and

all these instructors had recognized and given testimony to his merits. It was not, then, by accident or spontaneous evolution that the founder of the professional reputation of the Warrens appeared among the provincial practitioners as an accomplished surgeon. He learned, at only one remove, from the great masters of his art in the greatest city in the world. Self-made men are admirable in their way, but when the same zeal and ability which have won success for them are trained in the best schools of science and art, a few years do more than a lifetime passed in learning by failures, undoing what has been done wrongly, and setting up for one's self, letter by letter, a few pages of the volume which has been stereotyped for centuries. The traditions brought over by Dr. Lloyd, conveyed to his pupil, Joseph Warren, and by him to John Warren and to those who inherited his knowledge, were those of the best practitioners of the time.

Dr. John Warren was without question the most distinguished surgeon of his time in Boston. Dr. John C. Warren, his son, says of him, "My father, who preceded me, was a much better surgeon than myself." It is saying a good deal for one so eminent as the late John C. Warren to claim so much as this for his predecessor, and, without accepting the statement as doing justice to the younger of the two, we must at least recognize it as very high praise from a very competent source. He gave the first anatomical demonstrations ever made in Boston. He prepared the outlines of a plan for a medical school connected with Harvard University, and was the first professor chosen. We have heard those who have listened to Dr. John Warren's lectures on Anatomy speak of them as full of life and even eloquence. A dry bone, it is said, would almost regain its vitality in his hand and in his enlivening description. His business seems to have been larger than that of any practitioner in the generation which followed. But he was not content with practice alone, nor with the additional labors of his Professorship. He took an active interest in politics and wrote many stirring appeals on subjects of importance to the public. He was an enthusiastic disciple of Freemasonry, and became Grand Master of the Massachusetts Lodge. He was one of the founders of the Massachusetts Humane Society. He was the father of sixteen children.

This busy and useful life has been followed through its threescore and two years, from 1753 to 1815, by Dr. Edward Warren, the youngest of his children, if we remember right, with a loving diligence which has diffused itself not only over the immediate environments and conditions of its subject, but over many scenes and events which might at first sight seem somewhat remote from the writer's immediate aim.

Our medical readers will trace the career of the young surgeon from his first settlement in Salem, through his arduous labors as Hospital Surgeon, to his final settlement in Boston and his gradual rise to the preëminent place he at last held. They will learn incidentally many interesting details of the medical history of Boston, and obtain glimpses of its past celebrities which will be sure to engage their attention. They will learn many facts about the epidemics of preceding generations as they appeared here and in other places.

The general reader, who may care less about the professional matters treated in the book, will glean a large amount of information bearing on great events, both of peace and war, from the throwing overboard

of the Tea in 1773, to the illumination for peace in 1815. The local historian will find paragraphs enough to fill one or more of his scrap-books, and will transfer without abridgment the whole chapter on "Domestic Life," which is as unsparing of minutiae as a photograph, and would rejoice the soul of a thoroughbred antiquary, to whom *ne quid nimis* is the most unintelligible of precepts.

All readers will find themselves interested in the character of John Warren. Of a most ardent temperament, subdued to steady and persistent toil, a versatile intelligence which he kept faithfully to its appointed work, an affectionate and sympathizing nature, which was largely taxed and freely answered to all the incessant calls upon it from the sick and suffering, with a good deal of the hero in his disposition, which rendered it a question more than once whether he would not, like his brother, forsake his peaceful calling for the battle-field,—liberal, public-spirited, living to work, and dying at his work, he was worthy to be the founder of an honored name, which we are permitted to hope may long continue to be held in the respect and esteem it has claimed for three generations of those who have borne it and have left it to the grateful memory of after times.

O. W. H.

BOOKS AND PAMPHLETS RECEIVED.

On the Transmission of Syphilitic Contagion in the Rite of Circumcision. By R. W. Taylor, M.D. (Reprinted from the New York Medical and Surgical Journal.) New York. 1873.

Transactions of the Medical Society of New Jersey. 1873. Pp. 224.

Chromo of Andreas Vesalius. (From Codman & Shurtleff.)

The Physician's Handbook for 1874. By William Elmer, M.D., & Albert D. Elmer. M.D. New York: W. A. Townsend.

Annual Report of the Surgeon General of the United States Army. 1873. Pp. 13.

Essays on Diseases of Children. By Wm. Henry Day, M.D. London: J. & A. Churchill. 1873. Pp. 191.

OPERATIVE SURGERY REVOLUTIONIZED BY ANÆSTHETICS. — Professor Quinlan, in the *Medical Times and Gazette*, of November 8th, 1873, says:

"Formerly, the great aim of the surgeon was to accomplish his awful but necessary duty to his agonized patient as rapidly as possible, and a clinical clerk, with a watch, always stood by to note the time so occupied. Mr. Herbert Mayo performed amputation at the hip-joint, in ninety seconds. Mr. Edward Hutton amputated the middle of the thigh in seventy-eight seconds; and I have heard Jobert de Lamballe pronounce, not very slowly, the words, *un, deux, trois*, while he, with lightning speed, removed an arm at the shoulder. We have changed all this. We operate, like the sculptor, upon an insensible mass; we go carefully through our work, and although accomplishing it as quickly as we can, we do not count the seconds."

Boston Medical and Surgical Journal.

BOSTON : THURSDAY, JANUARY 1, 1874.

THE Editors desire to take advantage of the opportunity offered by the opening number of a new year and volume to express their thanks to the profession for the support given them during the past twelve months in their efforts to improve the standing and circulation of the JOURNAL. A substantial enlargement of the subscription list and a great increase in the amount of original matter offered for publication are gratifying proofs that these efforts have not been wholly without avail. The success of the Reports on the Progress of Medicine has been such as to encourage a continuance of this feature of the JOURNAL, and the experience of the past year gives promise of still greater improvement in the future. The departments of Reviews and Correspondence have been materially enlarged, and the Editors, gratified with the success which has met their efforts in this direction, hope now to turn their attention to other and not less important improvements. The advantages which a city like Boston possesses for furnishing material interesting and instructive to the profession ought not to be lost sight of. The pages of the JOURNAL are open to the hospitals, societies and teachers of medicine, as well as to private contributors. We trust the Editorial management of the JOURNAL is such as to encourage contributions from all these sources. As stated at the beginning of the past year, we shall make it our endeavor to take an active part in all discussions which affect the dignity or interests of the profession and the health of the community. Our views will be expressed freely and frankly, and although they may not prove acceptable to all, we shall endeavor to tell the truth as we see it, rather than follow a time-serving policy, that we may offend no one. We look confidently to the profession for support.

BEFORE yielding to the natural impulse which at this season inclines us to look forward, it may be well to cast a glance at the trials and struggles of the past year. It will not be classed among those happy ones that have no history, but, on the contrary, will be associated with many melancholy recollections. Death has reaped a rich harvest. Medicine and Science have lost Liebig, Nélaton, Holland and Agassiz, and a large number of well known and respected though less distinguished followers. Cholera has raged throughout a great part of Europe, and has made an attack, happily a slight one, in the Southwest-

ern States. Yellow fever has been rampant in the Mississippi Valley ; its victims are numbered by thousands. Nearer home, we have seen the close of the severe epidemic of smallpox and have been visited by a slight one of cerebro-spinal meningitis.

On the other hand, there has been much for congratulation. The first important event in this city was the appointment of a Board of Health, which went to work energetically, and soon completely suppressed the epidemic of smallpox which, in spite of the city government of the previous year, was already on the decline. The members of the Board did not consider their task done when there remained no active disease to combat, but with praiseworthy forethought took precautions against possible epidemics during the summer, and in the most fearless manner suppressed numberless nuisances. The expulsion of the homœopaths from the Massachusetts Medical Society is another gratifying incident. Freed from the reproach of their presence, the profession stands in a most satisfactory position, and bids fair to obtain the influence in public affairs which is its due. We would not be misunderstood on this point. Nothing is further from our wishes than that the profession should expose itself to defilement by contact with politics ; but as guardians of the public health, as the best judges on many points of public morality, physicians, as a class, have a right to a voice in many matters. If we claim this consistently, moderately, but persistently, it cannot be denied us. If we do not claim it, we do not use all the means at our command for the benefit of society and the honor of the profession, and are false to the duty we owe to both.

A CORONER's jury in recently rendering a verdict in this city, recommended that in all cases where persons are brought into station-houses in a state of insensibility or coma, such persons should have the immediate benefits of a physician, whose suggestions regarding such cases should be carried out. The following instance, taken from the *Canada Medical and Surgical Journal*, will show that there are other analogous cases, in which the rule might with still greater propriety be observed.

A few weeks ago, there arrived in Montreal a sailor, who, during the long voyage, had developed unmistakable symptoms of locomotor ataxia, which had for some time been threatening him. The day following, he left his ship, and was endeavoring, with the hesitating and uncertain gait peculiar to his disease, to make his way to the hospital, when he was overhauled by a policeman, and, in spite of his earnest remonstrances, dragged to the station, charged with being drunk. On the morrow, he was presented before the Recorder, and when he again

endeavored to explain the case, was told, on account of the difficulty of utterance under which he labored, that he was still drunk, and was forthwith condemned, in default of a fine, to imprisonment in the common jail for one month. This imprisonment the helpless man was obliged to undergo, finding it impossible to get any one to listen to his story, although it must have been clear to all that his condition remained unaltered throughout. Immediately on his release, he sought and obtained admission to the hospital, where, at last accounts, he was still under treatment.

The Hospitals.

MASSACHUSETTS GENERAL HOSPITAL.

(Saturday, December 20, 1873.)

OPERATIONS were performed in the following cases:—Dislocation at the Shoulder-joint, Tumor of Upper Jaw, Palmar Abscess, Tumor of Palate, Felon, Fistula Ani. During the week, Retention of Urine, with extensive extravasation, Vesico-Vaginal Fistula. On Monday last, Dr. Bigelow operated, during his clinical lecture, for Lupus of Nose, Torticollis, Abscess and Fistula in Ano.

Dislocation at Shoulder-joint of six weeks' standing. Male patient. Before employing extension, Dr. Cabot applied long strips of adhesive plaster to the chest to steady the scapula. The limb was first forcibly rotated to rupture adhesions. Horizontal extension was then made, counter-extension being maintained by a folded sheet carried under the axilla and crossed over the shoulder. After a few seconds, the head of the bone slipped into place. Dr. Cabot thought that the adhesive straps notably facilitated reduction by helping to fix the scapula.

Tumor of Upper Jaw, in a woman 53 years of age. The disease made its appearance about ten months ago, in the roof of the mouth on the inside of the alveolar process. It gradually increased in size, involving the horizontal plate of the maxilla, but did not occlude the nostril of that side, nor was it accompanied by pain. Dr. Bigelow operated by making a curved incision through the cheek, from near the zygomatic arch to the commissure of the lips, also a vertical incision through the upper lip from the nostril of that side. The flap thus formed was reflected so as to expose the maxilla nearly to the infra-orbital foramen. He then sawed horizontally through the antrum across the front of the bone, divided the hard palate on the median line with cutting forceps, incised the soft palate transversely behind and separated the maxilla from the pterygoid processes. The greater portion of the tumor (which proved to be epithelial) was comprised in this bony section. The small remaining portion, which had been sawn across, readily dropped from the upper part of the antrum which it occupied. Free hæmorrhage was controlled by tying vessels as the incisions were made. The flaps were adjusted; stitches were inserted, as usual, during anæsthesia, and their ends knotted together. The wound was then left widely open, until oozing should cease, and the house-surgeon directed to approximate the edges and tie the sutures together, four hours afterward. This practice has been followed in this hospital for many years as a precaution against secondary hæmorrhage in most considerable operations.

Palmar Abscess.—The pus had burrowed under the tendons of the first, second and third fingers. Dr. Cabot laid the cavities freely open.

Tumor of Soft Palate, in a woman. Her attention was called to its interference with deglutition a few months since. It was unaccompanied with pain, and about the size of a grape. Dr. Bigelow incised the tumor, which

proved to be a mucous cyst, and cauterized its interior with liquor ferri perchloridi.

Felon of Thumb—one week's duration. Dr. Cabot made a free incision.

Fistula in Ano—two cases. One was laid open by Dr. Bigelow, the other by Dr. Cabot.

Retention of Urine, with Abscess and Extravasation.—The patient was a man forty years old. Some years since, he fell on a log, injuring the perineum, since which he has had occasional attacks of retention, relieved by the catheter. One week ago, he had retention which did not yield to opiates, fomentations and catheter. Extravasation took place, beneath the dartos and superficial fascia, involving the scrotum, perineum and abdomen as high as the umbilicus, and laterally, downward on each side to Poupart's ligament. The patient was very weak on entrance, and suffering from intense pain. Under ether, free incisions were made, by Dr. Bigelow, as follows:—through the scrotum, along the raphé separating the testicles, and through the perineum to the urethra, the urine and pus gushing at each cut. A close stricture, posterior to the bulb of the urethra, was divided, and a No. 12 elastic catheter passed into the bladder. The tissues of the perineum were sloughing. A V-shaped incision was then made above the pubes, where the cellular tissue and muscles were found infiltrated with urine and pus. Two semi-lunar incisions, each five inches in length, were made on the sides of the abdomen, from a point two inches inside of the anterior superior spinous process of the ilium to the external abdominal ring. Sloughs were here also found down to the tendon. Vessels were tied, and poultices applied. The man has since steadily improved, the wounds rapidly filling with healthy granulations.

Vesico-Vaginal Fistula—in a woman 33 years of age, following a second instrumental delivery. At the operation, Dr. Cabot found a second fistula, which was left open to allow drainage of the bladder through the vagina, and for future operation. The edges of the fistula were pared and four silver-wire sutures inserted.

Lupus of Nose.—Case was reported in the JOURNAL for Dec. 11th. Rapid improvement followed the first application of the cautery, but the suspicious appearance of some points indicated a second operation. Dr. Bigelow again applied the galvano-cautery.

Torticollis—in a girl eight years of age, appearing one year after birth, without known cause. Dr. B. divided the tendon of the sterno-cleido-mastoid muscle subcutaneously.

Fistula in Ano—laid open, and the sphincter ani forcibly dilated.

Large Abscess of Neck—Glandular. Punctured with trocar and canula.

H. H. A. BEACH.

Correspondence.

THE RECENT DEATH IN THE DENTIST'S CHAIR.

BANGOR, ME., Dec. 19th, 1873.

MESSRS. EDITORS.—It is evident to me that exceptions of the strongest nature may be taken to the wisdom and accuracy of the verdict recently returned by the jury, in the case of the late Mrs. Crie, who died while inhaling a mixture of ether and chloroform in the dental chair of Dr. Eastham, in Boston. The jury came to the conclusion that "her death was caused by the inhalation of chloroform," and took the opportunity to "caution the public against the inhalation of so dangerous an agent as chloroform for the production of insensibility to pain."

I have watched this case with exceeding care, and, if the testimony of the witnesses may be relied upon, I fail to perceive the slightest foundation for such a verdict, or any reason, growing out of the investigation of this affair, which should warrant the sweeping condemnation of chloroform implied by the "caution." My exceptions to the verdict take form, when I assert my

belief that there were three other distinct, and exceedingly probable, causes of death in this case, independent of *direct* death from the action of chloroform.

First, we have the testimony of Mrs. Sawyer, who was present during the operation, and who assisted in the endeavors to resuscitate the unfortunate lady, that she "never saw a woman so tightly laced in her life." Please remember that a *woman* says this, and then imagine what must have been the effect upon Mrs. Crie's organs of respiration. She could not inhale the usual quantity of atmospheric air so very important to be freely mixed with the chloroform, nor could she exhale the normal quantity of carbonic acid gas so vitally requisite under such circumstances, while such *intense* compression would tend to crowd the lungs upon the heart, and impede or, perhaps, *wholly arrest its action*, especially were it a weak one. There are cases upon record where jurors have found, under exactly the same conditions, where chloroform, or any other anæsthetic, has been exhibited, and where death followed, that the result was due to the compression of the respiratory organs induced by tight lacing. I ask, is it not fair to suppose that Mrs. Crie's death *might* have been due to tight lacing and consequent undue compression of the lungs and heart?

Secondly, it is the testimony of several witnesses that Mrs. Crie was of what might be termed a hyper-nervous temperament. Her excessive fear that she might possibly feel pain from the operation, as she did upon a previous occasion, compelled her to refuse the administration of nitrous oxide, or laughing gas, and induced her to beg Dr. Eastham to be "*sure* and give her enough." This request she repeated several times, while he assured her that he would do so. All this goes to demonstrate the excessive fear with which she regarded the operation, and which, in my opinion, should have contra-indicated the exhibition of chloroform, unless such excessive fear could have been previously allayed. No person, save those who have witnessed it, can realize the effect of such extreme fear in women of a highly nervous and sensitive temperament. I have, time and again, seen such women tremble like an aspen leaf in every limb of the body, ending in a faint, at only the mere sight of the instrument. It is in the testimony that Dr. Eastham proceeded with the administration of the anæsthetic, and while she was evidently in a conscious condition, *said* to her, "I am going to extract this tooth now," to which she expressed decided disapproval, but he proceeded to carry his intention into execution, and did so, when she screamed with fear and pain, and immediately went into a spasm, from which she never recovered.

Up to the time of the extraction of the tooth, it is not mentioned that there were any contra-indications developed which forbade further administration of the anæsthetic; but instantly after the operation, she sank rapidly. As is well known, fear has a most depressing influence on the heart's action, and this should be carefully taken into consideration when administering chloroform. How many persons faint, even while preliminary arrangements, in anticipation of an operation, are going forward, and, indeed, how many are the cases upon record, of death from such fright. It would seem, then, but a reasonable supposition that Mrs. Crie's death might have been due to the depression of the heart's action, induced by excessive fright, combined with its inability to recover from such depression in consequence of the pressure of the lungs upon it, induced by the tight lacing.

Thirdly, it is in the evidence that the post mortem revealed the fact that the muscular walls of the heart were abnormal in their lack of tone, that they were weak, unusually so. Now, while the condition of this heart alone was sufficient, were it known beforehand, to constitute a contra-indication, yet, when you take into conjunction with it, the natural effect of fear, and the compression of the lungs upon it, is it at all strange that Mrs. Crie should have met with her death as she did? In fact, would it not have been most remarkable if she had lived? It seems to me that it would have been almost a miracle. In view of these facts, why make such a sweeping condemnation of chloroform? I would not be understood as being an advocate of its use, whenever it can be dispensed with, for it possesses a property, in that it is a

local anæsthetic—which ether is not—which makes it more or less dangerous, especially so in abnormal conditions of the heart. Dip the finger in chloroform and it will become sufficiently insensible to pain to perform operations upon it. In all probability, fatal results arise from this very ability to produce local anæsthesia. The blood goes from the lungs directly to the left auricle of the heart, thence to the left ventricle to be propelled through the aorta. The cardiac arteries going to, and supplying, the heart's structure, being the first branches of the aorta, are the first to receive the blood surcharged with chloroform vapor, which may cause local anæsthesia of the heart, and hence cessation of its action, or syncope; the heart's muscular fibres are relaxed and deadened, and thus it follows that chloroform is, so far as the heart is concerned, a specific narcotic, and hence its danger. But in some operations, especially in the oral cavity, where the first step may be of a character starting, in some instances, frightful hæmorrhage, which can be combatted only at the completion of the operation; to have a patient pass from control at such a moment, and under such circumstances (as they are most assuredly liable to do with ether alone), is sometimes a matter of serious concern; and, under such conditions, I maintain that chloroform is indispensable, and those gentlemen who composed that jury—if it be that they were any of them practitioners of surgery—know it just as well as I do, and, therefore, I ask again, why such an *unqualified* condemnation of chloroform? Had they restricted their disapproval to its inhalation for the performance of so simple an operation as the extraction of a tooth, I should have agreed with them heartily. But they did not; they caution the public “against the inhalation of so dangerous an agent as chloroform for the production of insensibility to pain,” regardless of the character of the operation to be performed. Such a condemnation is unjust in every sense of the word, since it condemns in advance every surgeon who deems it his duty to administer it, and doubly so when its foundation is suggested by the results in Mrs. Crie's case (where the only reason they had, as it would seem, was the fact that she inhaled it), as it has been the aim of this article to demonstrate.

J. FREDERIC BABCOCK, D.D.S.

[We readily publish this letter as a proof of our willingness to hear both sides of the question; but we cannot attach any importance to the objections of our correspondent, with the exception, perhaps, of the first. We do not know on what authority he states that Mrs. Sawyer testified that she “never saw a woman so tightly laced in her life;” according to our special reporter, she said only that the deceased was laced very tightly. With regard to the intense fear, it is entirely an assumption; there is no evidence to show it. The fact that the patient asked thrice to have enough of the anæsthetic shows confidence rather than anxiety. The statement that chloroform is indispensable in severe operations in the mouth, and, we may add, under any circumstances in civil practice, is contrary to all experience in cities where ether is understood and can come only from a want of familiarity with the latter anæsthetic.—Eds.]

Obituary.

B. B. BREED, M. D.

BOWMAN B. BREED was born in Lynn, on the 29th of February, 1832. He was the son of the late Isaiah Breed, a prominent citizen, who held several important public positions during his life.

Of naturally poor constitution, he early evinced a studious disposition, which was encouraged by his parents. After a preparatory course at Phillips Academy, he graduated at Amherst College in 1853, with much

credit. Choosing the profession of medicine, after pursuing the course and graduating at Harvard in 1857, he spent two years in study abroad.

He was just getting established in practice at Lynn at the breaking out of the rebellion, when his services were tendered to the government and were accepted, he being first commissioned as Surgeon of the 8th Mass. Regiment. He was subsequently commissioned as Surgeon U. S. V., was in charge of two military hospitals in Washington, and afterwards served as Medical Purveyor at New Berne, N. C., Medical Director at Norfolk, Va., and still later was transferred to hospitals at St. Louis, Mo., and Nashville, Tenn.

When the Military Asylum at Augusta, Me., was established at the close of the war, he was appointed Surgeon there, and faithfully and acceptably performed the duties of that office until the destruction of the Asylum by fire. Returning to Lynn in March, 1868, he resumed the practice of his profession; but his health was not equal to the wear and tear of private practice, and about a year and a half ago he relinquished practice, purchased an interest in the *Lynn Reporter*, and entered upon the duties of editor, for which he was well fitted by his literary tastes and fine education.

His health had been gradually failing for the last six months, but no symptoms occurred that called his attention, or that of the eminent physicians that he consulted, to the real trouble.

It was only after he was confined to his bed that he was discovered to be in an advanced state of Bright's disease.

Congestion of the lungs set in on December 13th, and he passed away on the morning of the 16th.

Dr. Breed served as member of the Legislature in 1872 and 1873, was Alderman in 1870, and member of the Common Council for the three years following, being President of that body at the time of his death. He also served upon the School Committee for several terms.

He was a valued member of the Massachusetts Medical Society, of the Masonic order and the Grand Army of the Republic.

He was also an active member of, and worker in, the Central Congregational Church and Sunday School.

As a physician, he was endeared to his patients by his sympathetic nature and faithful service, and he was ever ready to extend a helping hand to the younger members of his profession.

As a public officer, he was always distinguished by conscientious devotion to duty, regardless of personal consequences.

In every relation in life, he merited the most exalted epithet that can be bestowed, that of a Christian gentleman.

The esteem in which he was held by his medical associates is shown by the following letter, adopted by them in place of a formal set of resolutions, which they felt would but feebly express their sentiments:—

"To the family and friends of the late Dr. B. B. Breed:

"The physicians of Lynn are in grief for the loss from their midst, in the prime of life, of a very dear and faithful brother.

"We knew and appreciated his worth as a learned and skilful physician and surgeon, and were always cheered by the presence of so genial, generous, and benevolent a Christian gentleman.

"For his good words, and good works, and brotherly kindness, remaining uncanceled, we owe a debt to his family, which we will acknowledge while we live, and, as far as possible, repay.

"DEAR FRIENDS:—Be pleased to consider us as your debtors, and call on us, or any of us, for any kindness that we may be able to show you.

"We assure you of our earnest sympathy, and pray that you may find much greater comfort and support than it lies in our power to afford.

"Affectionately yours, in behalf of the Lynn Medical Society,

DANIEL PERLEY	} Committee,"
J. G. PINKHAM	
J. O. WEBSTER	

Lynn, December 17, 1873.

J. O. W.

Medical Miscellany.

WE are happy to announce that the Board of Aldermen has refused Jourdain a license for his so-called Gallery of Anatomy.

"THE practice of medicine followed as a mere business is the meanest of all vocations."—*New York Medical Record*.

A CHARITABLE QUACK closes his advertisement as follows:—"N. B. Patients with means need not stay away. I will do just as well for them as though destitute."

"SWEET SPIRITS OF NITRE."—Of its "medical" value the *London Lancet*, of Dec. 6th, says:—"It is probably almost entirely devoid of those diaphoretic and diuretic properties with which it was formerly credited." And further:—"Whether made in the old fashion or the new, it is of little worth; but when made by the blundering old process it possesses absolutely no value whatever."

RUSSIAN CAVIAR.—Among the more recent advances in the way of adulteration of articles of food, we notice that a compound has been extensively sold in Berlin under the name of "Russian caviar," which an analysis proved to be simply *sago*, saturated with some black liquid, the exact nature of which could not be made out.

CHOLERA.—Forty-two persons were attacked with cholera in Berlin between October 23d and November 20th. The disease is also increasing in Munich, eleven fresh cases being reported on the 20th ult.

ARRESTED DEVELOPMENT OF THE EYEBALL.—A child, fourteen days old, was brought to the Westminster Ophthalmic Hospital, having a cystic swelling, the size of a walnut, over the left eye, noticed a few days after birth. The contents of the cyst were evacuated with a grooved needle, but, inasmuch as the cyst speedily became refilled, it was necessary to resort to a seton. It was ultimately discovered that the eyeball was undeveloped, a rudimentary stump occupying the cavity.

FORMULA FOR SICK HEADACHE.—R. Granulated muriate of ammonia, one teaspoonful; acetate of morphia, one grain; water, one half pound. M. Dose for an adult, two teaspoonfuls every ten minutes till relief is obtained.

PYÆMIA.—Prof. v. Nussbaum recommends burning the bone and its marrow with an iron heated to a white heat after amputations of the limbs, in order to prevent the occurrence of pyæmia. He has employed this method with success nine times during the past six months, pyæmia prevailing in the wards quite as extensively during this time as in the previous year, when two-thirds of the amputated patients succumbed to this disease.—*Communication to the Gesellschaft für Chirurgie*.

CONGENITAL CHIGNON.—Dr. Wm. Elmer reports a case of congenital *chignon*, the wearer of which fortunately died a few days after birth. An autopsy showed the abnormal appendage to be a sack proceeding from a foramen below the occipital bone, lined with the brain membranes, and filled with a gelatinous fluid.—*Transactions of New Jersey Medical Society*.

THE HOMŒOPATHISTS ON HYPODERMIC INJECTION.—The "Homœopathic Academy of Medicine" of Chicago, recently passed the following resolution:—

"Resolved, That we, the Chicago Academy of Homœopathic Physicians and Surgeons, in view of serious and often fatal results from the hypodermic injections of morphia and other drugs, denounce this method as being unnatural, barbarous, and highly dangerous."—*Medical and Surgical Reporter*.

THE position of medical adviser to the tribe of Tulare Indians, in California, is vacant. The late incumbent had intrusted to his care a number of sick Indians, all of whom, unfortunately, died, upon which a grand council was held, and the medicine man was condemned to death and promptly executed.—*Medical and Surgical Reporter*.

RELAXATION OF THE SPHINCTER ANI AN INDICATION OF INTUSSUSCEPTION.—Dr. J. Schültz, of Prague, has observed, in three separate instances, that intussusception of the intestine is accompanied by complete relaxation of the external and internal sphincter ani. In this condition, two fingers can be introduced into the rectum, without the exercise of force, and without inflicting any unpleasant sensation upon the patient.

DIRECT EXAMINATION OF THE URETER IN A CASE OF SUSPECTED CALCULUS.—The new method of rectal examination was recently made use of by Dr. T. G. Morton, in a case of suspected calculus of the ureter. The line of the ureter, and the region of the kidney were found normal, while the aorta and iliac vessels were readily distinguished. Although no calculus was discovered, the manipulation of the intestine appears to have induced free defecations, which were immediately followed by relief of the symptoms.—*Philadelphia Medical Times*, Dec. 20.

CORNISH RIVERS.—The Rivers Pollution Commissioners report that the production of white arsenic, and the poisoning of the rivers with it, is carried on in Cornwall on a gigantic scale. Speaking of one mine, they say, "There leaves this single mine every month an amount of white arsenic competent to destroy the lives of more than 500,000,000 of human beings. We saw stored in its warehouses, ready packed for sale, a quantity of white arsenic probably sufficient to destroy every living animal upon the face of the earth. It is, perhaps, still more startling to reflect that there is at present no efficient law to prevent manifold this amount of this deadly material from being cast monthly into the rivers and water courses of this country; not, it is true, to expend its poisonous energy at once, for the munda is insoluble in water, but, by its slow decomposition to render rivers so treated poisonous and uninhabitable by fish for many generations."—*London Medical Record*.

NOTES AND QUERIES.

HAVE any remedies, for the removal of ascarides, been discovered that were unknown half a century ago? Are injections of ether beneficial? What is the formula for their use?

ANTI-ASCARIDES.

MORTALITY IN MASSACHUSETTS.—Deaths in fifteen Cities and Towns for the week ending December 20, 1873.

Boston, 115—Charlestown, 20—Worcester, 17—Lowell, 18—Milford, 4—Chelsea, 5—Cambridge, 18—Salem, 9—Lawrence, 12—Springfield, 7—Lynn, 12—Fitchburg, 7—Newburyport, 6—Somerville, 3—Fall River, 18. Total, 271.

Prevalent Diseases.—Pneumonia, 35—consumption, 33—scarlet fever, 27—typhoid fever, 14.

Of the deaths from scarlet fever, ten were in Fall River, six in Boston and five in Charlestown.

GEORGE DERBY, M.D.,
Secretary of the State Board of Health.

DEATHS IN BOSTON for the week ending Saturday, Dec. 27th, 126. Males, 59; females, 67. Accident, 5—apoplexy, 1—inflammation of the bowels, 2—disease of the bladder, 1—bronchitis, 6—disease of the brain, 4—cancer, 5—cyanosis, 1—cholera infantum, 1—consumption, 19—convulsions, 4—croup, 1—debility, 5—dropsy, 1—dropsy of the brain, 1—drowned, 2—exhaustion, 1—erysipelas, 3—scarlet fever, 15—typhoid fever, 5—disease of the heart, 4—hemorrhage, 1—intemperance, 1—disease of the kidneys, 2—inflammation of the lungs, 9—marasmus, 4—measles, 1—murder, 1—old age, 2—paralysis, 1—pleurisy, 1—peritonitis, 4—poisoned, 1—pyæmia, 1—rheumatism, 2—suicide, 1—tumor, 1—inflammation of uterus, 1—whooping cough, 1—unknown, 2.

Under 5 years of age, 46—between 5 and 20 years, 15—between 20 and 40 years, 27—between 40 and 60 years, 20—over 60 years, 18. Born in the United States, 79—Ireland, 36—other places, 11.